

CLAIMS

What is claimed is:

1. A method of fabricating a solar cell, the method comprising:

etching a first layer comprising copper without substantially etching a

5 topmost metallic layer of a solar cell.

2. The method of claim 1 wherein the topmost metallic layer comprises tin.

3. The method of claim 1 wherein the first layer is etched using an etchant comprising sulfuric acid and hydrogen peroxide.

4. The method of claim 1 wherein the first layer is etched using an etchant
10 comprising about 1% by volume of sulfuric acid, about 4% by volume of phosphoric acid, and about 2% by volume of stabilized hydrogen peroxide.

5. The method of claim 1 wherein the first layer is etched using a Co-Bra Etch[®] etchant.

6. The method of claim 5 wherein the Co-Bra Etch[®] etchant is modified to
15 comprise about 1% by volume of sulfuric acid, about 4% by volume of phosphoric acid, and about 2% by volume of stabilized hydrogen peroxide.

7. The method of claim 1 wherein the first layer is etched using a Perma-Etch[®] etchant.

8. The method of claim 1 wherein the topmost metallic layer comprises tin
20 and the first layer is etched using an etchant comprising sulfuric acid and hydrogen peroxide.

9. The method of claim 1 further comprising:

etching a second layer comprising titanium-tungsten using an etchant comprising hydrogen peroxide.

10. The method of claim 9 further comprising:

5 etching a third layer comprising aluminum using an etchant comprising potassium hydroxide.

11. The method of claim 1 further comprising:

etching a second layer comprising aluminum using an etchant comprising potassium hydroxide.

10 12. The method of claim 11 wherein the etchant comprises about 1% by volume of potassium hydroxide in water.

13. A method of etching a layer of material in a solar cell, the method comprising:

15 etching a copper layer selective to a tin layer using an etchant comprising sulfuric acid and hydrogen peroxide.

14. The method of claim 13 wherein the etchant comprises about 1% by volume of sulfuric acid, about 4% by volume of phosphoric acid, and about 2% by volume of stabilized hydrogen peroxide.

20 15. A method of etching a layer of material in a solar cell, the method comprising:

etching a metal layer without substantially etching a tin layer of a solar cell.

16. The method of claim 15 wherein the metal layer comprises copper.

17. The method of claim 15 wherein the metal layer comprises copper etched using an etchant comprising about 1% by volume of sulfuric acid, about 4% by volume of phosphoric acid, and about 2% by volume of stabilized hydrogen peroxide.

5 18. The method of claim 15 wherein the metal layer comprises copper etched using an etchant comprising hydrogen peroxide and sulfuric acid.

19. The method of claim 15 wherein the metal layer comprises aluminum.

20. The method of claim 15 wherein the metal layer comprises aluminum etched using an etchant comprising potassium hydroxide.

10 21. The method of claim 15 wherein the metal layer comprises aluminum etched using an etchant comprising about 1% by volume of potassium hydroxide in water.

22. A method of etching a layer of material in a solar cell, the method comprising:

15 etching an aluminum layer selective to a tin layer using an etchant comprising potassium hydroxide.

23. The method of claim 22 wherein the etchant comprises about 1% by volume of potassium hydroxide in water.

20 24. An etchant for removing portions of a copper layer in a solar cell without substantially etching a solderable tin layer, the etchant comprising hydrogen peroxide and sulfuric acid.

25. The etchant of claim 24 wherein the etchant comprises about 1% by volume of sulfuric acid, about 4% by volume of phosphoric acid, and about 2% by volume of stabilized hydrogen peroxide.

26. An etchant for removing portions of an aluminum layer in a solar cell
5 without excessively etching a tin layer, the etchant comprising potassium hydroxide.

27. The etchant of claim 26 wherein the etchant comprises about 1% by volume of potassium hydroxide in water.

28. A method of fabricating a solar cell, the method comprising:

etching a first layer comprising aluminum without substantially etching a
10 topmost metallic layer of a solar cell.

29. The method of claim 28 wherein the topmost metallic layer comprises tin.

30. The method of claim 28 wherein the first layer is etched using an etchant comprising potassium hydroxide.

31. The method of claim 30 wherein the etchant comprises about 1% by
15 volume of potassium hydroxide in water.

32. The method of claim 28 wherein the first layer is etched using an etchant that is selective to an oxide layer under the first layer.